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**Subjective Job Insecurity and the Rise of the Precariat:  
Evidence from the UK, Germany and the United States**

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**Abstract**

There is a widespread belief that work is less secure than in the past, that an increasing share of workers are part of the 'precariat'. It has been hard to find evidence for this in objective measures of job security but perhaps subjective measures show different trends. However, this paper shows that in the US, UK and Germany, there is no trend towards increased subjective measures of job security. This conclusion seems robust to controlling for the changing mix of the labour force and true for specific sub-sets of workers.

Key words: job security, precariat

JEL Codes: J28

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# 1 Introduction

This paper investigates the trends in self-perceived job security in the advanced industrial economies of the United Kingdom, Germany, and the United States, over the past four decades. In discussions about the evolution of the labour market it is common to hear what Hollister (2011) calls the “New Employment Narrative”, or Standing (2011) the rise of the ‘precariat’, that security of employment has fallen substantially in recent decades. Putative causes include technological change (see Rifkin, 1995, for an early expression of this view) and globalization (Kalleberg, 2009), with an associated decline of manufacturing employment and unionization, and the rise of “non-standard employment” i.e. temporary or part-time work, the gig economy, zero-hour contracts, out-sourcing, and other “flexible” work arrangements (see, for example, Davis, 2009; Fantasia & Voss, 2004; or Weil, 2014). The idea of rising job insecurity has captured the academic imagination: Figure 1 shows both the total number of publications related to job (in)security that can be found on the Scopus database of peer-reviewed academic literature over time, as well as the number of publications per 10,000 social science papers. Both metrics have clearly been rising since the 1990s.

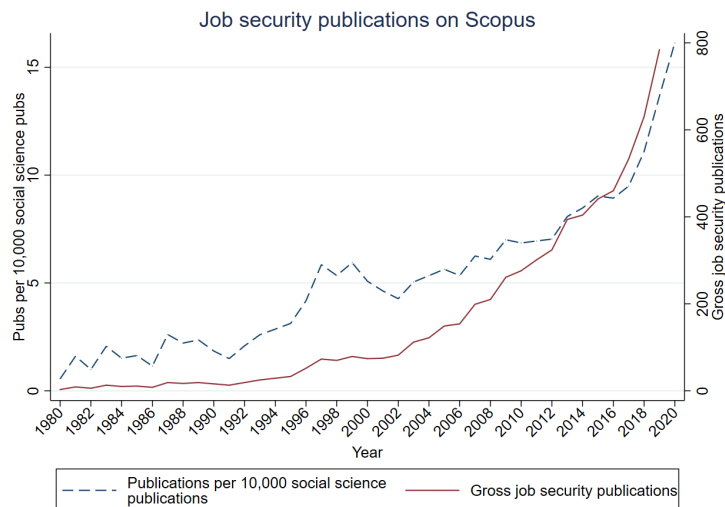


Figure 1: Job security publications on Scopus over time

Although it is a widespread belief that job insecurity has risen, it has proved hard to find clear evidence for it in objective measures of job security like labor turnover rates (Neumark et al., 1999, Farber (2001, Fujita , 2018, and Molloy et al., 2016) and the job tenure distribution (Neumark, 2000, Jaeger & Stevens, 2000, Hollister , 2011, Bachmann & Felder, 2018).

But even if objective measures of job security show little evidence of decline, it is possible that workers feel more insecure, i.e. subjective job security has fallen. This would be a cause for concern, as there is evidence that self-perceived job insecurity, whether or not a termination is realised, has a detrimental impact on the worker's psychological health, stress levels, and job attitudes (see Ferrie, 2001 and Sverke et al., 2002 for summaries of the early literature, and Benach et al., 2014 or László et al., 2010 for more recent work). Most of the existing literature on subjective job security (Luebke and Erlinghagen, 2014; Erlinghagen, 2008; Green, 2009) focuses on cross-sectional analysis rather than long-term trends. It has found, for example, that temporary workers and those on fixed-term contracts report higher insecurity (Luebke and Erlinghagen, 2014; Keim et al., 2014). Some of the literature also compares perceived job security across countries with mixed results: Hank and Erlinghagen (2011) conclude that factors like employment protection legislation, and levels of social trust cannot significantly explain job security on an individual level. One of the only robust results that has emerged from these macro-level studies is the correlation between the unemployment rate and the proportion of workers that feels insecure (Anderson and Pontusson, 2007; Erlinghagen, 2008; Schmidt, 1999; Luebke and Erlinghagen, 2014). There is little literature on longer-run trends in self-perceived job security in the though Molloy et al. (2020) do have a brief discussion of trends in the US (it is not, however, the main focus of their analysis).

In this paper, we examine trends in subjective job security in three countries, the US, UK and Germany over the past four decades. Our main conclusion is that while insecurity is very cyclical (e.g. rising in the Great Financial Crisis (GFC) beginning in 2007-08 and almost certainly rising in the COVID-19 pandemic), there is little long-run trend, and levels of job security pre-pandemic were at historically low levels. We find that adjusting for changes in demographic and other socioeconomic characteristics in the workforce makes little difference to the overall raw trend, and that the proportion of workers that feels insecure at any given point time has not seen any demographically-adjusted, secular rise over the course of the time series. This result is robust across all three countries in the sample, and we find an almost complete absence of heterogeneity in trends across different demographics and job types. For example, although we do find that workers on temporary or fixed-term contracts report less job security, the rise in the proportion of workers in atypical employment does not underpin any rise in job insecurity—subjective job security for this group of workers has risen in line with the security of workers in more traditional work settings over the course of our sample. Evidence from the rest of Europe suggests that these stylised facts are also likely to be true on the continent, with the proportion of workers that feel insecure today no higher than it was before the GFC in most European countries<sup>1</sup>. Finally, we find no evidence that the rise of atypical work arrangements has made workers less satisfied with their jobs than before the crisis in each of our three main countries of study. Our findings call into question the validity of the “New Employment Narrative”: by our accounting, there simply is not enough evidence that workers are more likely to feel insecure today than they did a few decades ago to support the claims made by those who promote narratives that emphasize the rise of the “precariat” as a new, highly-insecure strata of workers on flexible contracts.

The plan of the paper is as follows. Section 2 describes the data we use, explains how each survey measures subjective job security, and measures the raw trend in subjective job security over time in each of the three countries. In Section 3, we adjust these raw trends to account for the changing demographic and socioeconomic characteristics of the workforce, and show that the absence of a rise in subjective insecurity is robust to these adjustments. We also calculate the marginal effects of some of these worker characteristics on job security, confirming that job security is heterogeneous across demographic and job categories. In Section 4, we investigate whether the heterogeneity in levels that we find extends to heterogeneity in trends; we find that most subgroups have experienced remarkably similar trends, and that nearly all types of

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<sup>1</sup>The exceptions, as will be seen in Section 5, are countries like Spain where high unemployment and overall stagnation were still looming over policymakers in 2015, the final year of our data for mainland Europe.

workers were experiencing record highs in job security before the COVID-19 pandemic began. In Section 5, we look at broader evidence on job security in Europe, and show that the proportion of workers that report feeling insecure has not risen in the vast majority of European countries since the GFC. Section 6 considers the argument that the rise of the precariat is to be found in dimensions of security other than the subjective risk of job loss we consider here. However, we show that the general level of job satisfaction shows similar trends to those in subjective job security, suggesting there is no large determinant of job satisfaction missing from our analysis. Section 7 concludes.

## 2 Data

This section describes each dataset, the questions on perceived job insecurity (different in each survey) and the methodology used to construct a binary variable that indicates whether or not a respondent feels insecure in their job.

### 2.1 US General Social Survey (GSS)

The General Social Survey (GSS) is a repeated cross-sectional survey that has been conducted annually by the National Opinion Research Center at the University of Chicago since 1972, and aims to catalogue Americans’ attitudes towards various political, economic, and social issues<sup>2</sup>. The master dataset which contains all waves of the survey has 64,814 individual observations. Not all respondents are employed, and not all respondents give answers to all of the questions that form the covariates used in the analysis below.

The GSS asks respondents if they are likely to lose their job on a scale of 1-4, with 1 being “very likely”, 2 being “fairly likely”, 3 being “not too likely”, and 4 being “not likely”. To enable simpler presentation of results, we construct a binary variable which takes value 1 for respondents that answer 1 or 2, and value 0 if they respond 3 or 4<sup>3</sup>. The question was first asked in 1977 and asked in every subsequent year apart from 1980, 1984 and 1987. In total, we have 23,328 observations covering the period from 1977 to 2018, with between 900 and 1,900 complete responses per year.

The proportion of US workers that report feeling insecure is plotted over time in Figure 2. Consistent with the findings of Fullerton and Wallace (2007) and Molloy et al. (2020), this series does not demonstrate a

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<sup>2</sup>Smith, Tom W., Davern, Michael, Freese, Jeremy, and Morgan, Stephen L., General Social Surveys, 1972-2018 [machine-readable data file]. Principal Investigator, Smith, Tom W.; Co-Principal Investigators, Michael Davern, Jeremy Freese and Stephen L. Morgan; Sponsored by National Science Foundation. --NORC ed.-- Chicago: NORC, 2019. 1 data file (64,814 logical records) + 1 codebook (3,758 pp.). -- (National Data Program for the Social Sciences, no. 25).

<sup>3</sup>Similar conclusions would be drawn if the 4-way responses of the original question are used.

noticeable secular trend in reported job security, though it does have marked cycles. Figure 2 also plots the annual unemployment rate from FRED and job separation rates from Shimer (2012) and the Bureau of Labor Statistics, two more objective measures of job insecurity. These series also show no long-run deterioration but the rises in perceived job insecurity coincide with recessions.

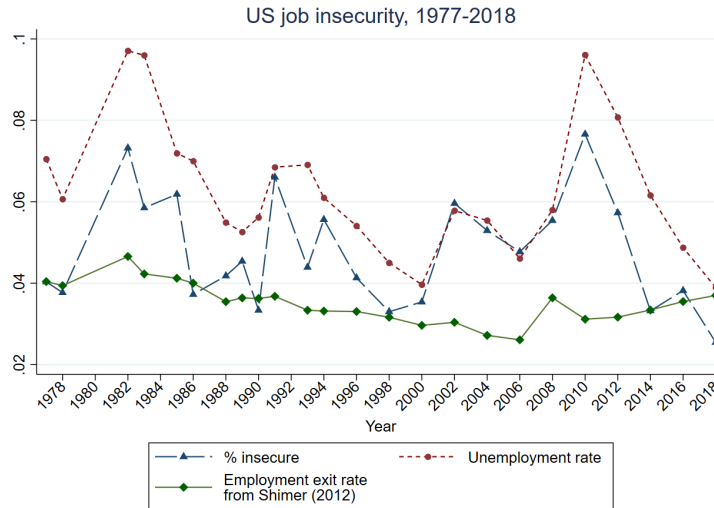


Figure 2: Job insecurity in the United States, 1977-2018

## 2.2 British Household Panel Survey (BHPS) and UK Household Longitudinal Survey (UKHLS)

The BHPS (1991-2008) and its successor survey, the UKHLS (2009-present), are longitudinal surveys conducted by the Institute for Social and Economic Research at the University of Essex that follow British households over time and track respondents' demographic information, socioeconomic characteristics, attitudes and behaviours, and health and wellbeing<sup>4</sup>. The 18 waves of the BHPS, conducted within one calendar year, have an average of 10,000 to 15,000 respondents per wave, while the UKHLS has around 40,000 to 50,000 per wave, each of which spans two calendar years and overlaps with the two surrounding waves. In total we have 119,488 observations, with between 5,000 and 10,000 observations per year until the end of the BHPS. From 2009 on, alternating years have very few observations (for example, 2011 has 208 observations). This is due to the rotating nature of the question set—the job security question in the UKHLS, discussed below, is only asked every other wave, leaving some years with few responses.

The question on subjective job insecurity is different in BHPS and UKHLS. The BHPS asks respondents to

<sup>4</sup>University of Essex, Institute for Social and Economic Research. (2020). Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009. [data collection]. 12th Edition. UK Data Service. SN: 6614, <http://doi.org/10.5255/UKDA-SN-6614-13>

rank how satisfied they are with their job security on a scale of 1-7, with 1 indicating “Not satisfied at all”, 4 indicating “Neither satisfied nor dissatisfied”, and 7 indicating “Completely satisfied”. We define insecurity as giving a response of 1, 2, or 3 to this job security question<sup>5</sup>. The UKHLS asks respondents how likely it is that they will lose their job in the next 12 months, on a scale of 1-4, with 1 indicating “Very likely”, 2 indicating “Likely”, 3 indicating “Unlikely”, and 4 indicating “Very unlikely”; this question is only asked in even-numbered waves. The difference in the question leads to a break in the time series, which is especially problematic because it is at the same time as the financial crisis, a point at which there may have been large changes in job security.

To deal with this problem we use the fact that in Waves 6 and 7 (1996 and 1997) of the BHPS, respondents are asked both the original BHPS question as well as the UKHLS question about likelihood of job loss. We use this cross-walk to make the two surveys comparable by using Waves 6 and 7 to “translate” UKHLS question responses into the 1-7 scale of the earlier BHPS question using the crosstab of the two questions, conditional on other characteristics. This process allows us to assign for each individual giving a response to the UKHLS question a probability that they would have given the response to the BHPS question: for technical details of this process, see Appendix B. Using this approach we can compute an estimate of the proportion of the workers in the UKHLS who would have reported they felt insecure using the BHPS question. Figure 3 plots our estimate of the proportion of UK workers feeling insecure over time, together with the UK unemployment rate and separation rate as calculated by the ONS<sup>6</sup>. As in the US, aggregate perceived job insecurity is cyclical but with no long-run trend.

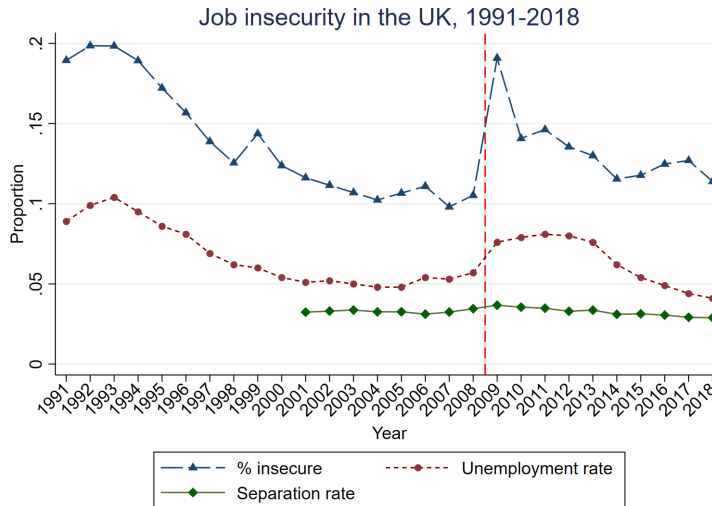


Figure 3: Job insecurity in the United Kingdom, 1991-2018

<sup>5</sup>Though, as in the US case, none of the conclusions are sensitive to converting to a binary outcome

<sup>6</sup>Office for National Statistics, (2020). X02: Labour Force Survey Flows estimates. London: Office for National Statistics.



## 2.3 German Socio-Economic Panel (SOEP)

The SOEP is an independent longitudinal survey conducted by DIW Berlin that aims to collect data that allows researchers to “...study processes of transformation and change in our society”<sup>7</sup>. The survey has been conducted annually since 1984, and in 1990 the survey expanded to include respondents from East Germany in addition to the original West German respondents. The survey began by interviewing around 15,000 individuals per wave, rising to 30,000 per wave by 2000, and up to 60,000 per wave in recent years. Restricting the sample to those who answer the job security question and have non-missing covariates leaves 182,450 observations.

Each year, SOEP asks whether the respondent is worried about his or her job security. Respondents can answer either 1 (very concerned), 2 (somewhat concerned), or 3 (not concerned). From these responses, we construct a binary variable which takes value 1 if the respondent answers 1 to the job security question, and value 0 if they give answer 2 or 3.

The proportion of German workers that feel insecure, overlayed with the annual unemployment rate, is plotted over time in Figure 4 below (Data on separation rates is not available). Pre-1990 unemployment data is from West Germany only. As with the US and the UK, job insecurity is cyclical but without a visually noticeable long-run trend that is independent of the business cycle. In fact, the proportion of German workers that feel insecure today is over 15pp lower than its peak in the mid-2000s. The impact of re-unification on job security of East German workers is very clear (when there were very large job losses) but so is the convergence between subjective job security in East and West Germany since then.

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<sup>7</sup>Socio-Economic Panel (SOEP), data for years 1984-2018, version 3y, SOEP, 20xx, doi:10.5684/soep.v3y.; Goebel, Jan, Markus M. Grabka, Stefan Liebig, Martin Kroh, David Richter, Carsten Schröder, Jürgen Schupp. 2019. The German Socio-Economic Panel Study (SOEP). *Jahrbücher für Nationalökonomie und Statistik / Journal of Economics and Statistics*, 239(2), 345-360.

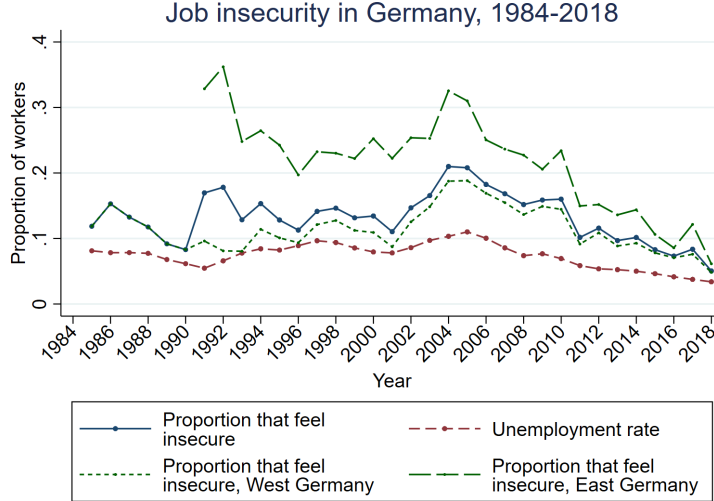


Figure 4: Job insecurity in Germany, 1984-2018

## 2.4 Does Subjective Job Insecurity Predict Job Loss?

One concern with the use of subjective measures of job insecurity is that they may not have any predictive power for actual subsequent job loss. Even if there was no predictive power, one might still be concerned about subjective measures of job security because of the stress costs of feeling insecure. However, using the panel structure of the BHPS and SOEP data, we show in Appendix A that this is indeed the case:

insecurity today is strongly associated with job loss or job change tomorrow. Thus, we can feel confident that the responses to the job security questions in our three datasets are informative about the changing (or unchanging) nature of objective job security, and do not simply illustrate changes in stress costs associated with feeling insecure, stemming from an ignorance of objective job loss probabilities on the part of workers.

## 3 Adjusting for the Characteristics of Employment

Although there is no aggregate trend in job insecurity for any of the three countries we study, it is possible that this is because the structure of the workforce is changing in ways that lead to less job insecurity even as job insecurity is deteriorating for any individual worker. For example, if older workers feel less insecure on average, the ageing of employment would tend to produce a downward trend in the job insecurity (Molloy et al., 2020, show that the aging of the workforce can explain the fall in job-to-job mobility in the US). To address this, this section estimates models for the probability that a worker reports feeling insecure in their

job:  $Pr(insecure = 1)$  controlling for socioeconomic and demographic characteristics of workers that may affect job security and also including dummy variables for each year. The coefficients on the year dummies then tell us about trends in perceived job insecurity controlling for worker characteristics relative to a base year.

We use the following controls in these regressions. We include standard demographic controls for the individual: dummies for sex, ethnicity, immigrant status, marital status, a quadratic function of age, and education. We also control for various job characteristics: a dummy variable for whether a worker is a temporary employee or on a fixed-term contract, and whether the worker is self-employed, both those with and without employees. We do not have all variables for all countries: we are missing whether a worker is on a temporary contract and job tenure in the United States, union membership and ethnicity in Germany, and we lack data on the job security of the self-employed in the UK after the BHPS transitioned to the UKHLS because the question was no longer asked to the self-employed. We also control for industry using single-digit International SOC codes for the UK and Germany, and using two-digit NAICS codes for the US. For the UK, we are also able to control for job tenure. The longitudinal nature of the UK and German data allows us to include individual fixed effects, which partial out time-invariant unobserved heterogeneity. Inclusion of fixed effects does not make a substantive difference to the trends, so, to facilitate comparisons with the US, we choose to exclude the individual FEs and include the time-invariant demographic controls. Results from the equivalent regressions that include individual fixed effects can be found in Appendix B.4.

Weighted summary statistics for these control variables can be found in Table 1, with separate columns for pre- and post-2008 data for each survey. The evolution of these statistics across the two periods reflects both changes in survey objectives (surveyors have emphasised the participation of underrepresented groups proportionately more in recent waves) and in population-level demographics. Thus, the proportion of respondents that are nonwhite or are immigrants has rose over time in all three surveys, and the respondent population post-2008 is older and better-educated, has a lower marriage rate, and contains fewer union members. The rise of “non-standard employment” is also apparent, with a marked increase in part-time work in all three countries—however, trends in temporary work are mixed, higher in Germany but lower in the UK relative to the pre-2008 period. The sharp cutoff does obscure the fact that the prevalence of temporary work has been rising in the UK since 2008, but is still at a lower proportion of the workforce than it was in the early and mid-1990s. It is also notable that mean job tenure in the UK is higher post-2008. This is consistent with Bachmann & Felder (2012)’s finding that crisis-era layoffs in Europe were concentrated among short-tenure workers, increasing the average tenure of remaining workers.

Table 1: Descriptive statistics of covariates

	GSS		BHPS		SOEP	
	pre-2008	post-2008	pre-2008	post-2008	pre-2008	post-2008
Age	40.6 (21.95)	43.81 (27.55)	42.91 (41.58)	45.05 (31.8)	39.66 (41.94)	28.68 (40.33)
Male	.5373 (.6104)	.5206 (.6681)	.5669 (.8584)	.5197 (.778)	.5792 (.9261)	.3615 (.7953)
Married	.5462 (.4979)	.4716 (.4992)	.5716 (.4948)	.5855 (.4926)	.5974 (.4904)	.58 (.4936)
Non-white	.182 (.4473)	.262 (.5362)	.04826 (.3278)	.08178 (.2917)		
Immigrant	.09226 (.3397)	.1339 (.4165)	.06296 (.3533)	.1117 (.4063)	.1253 (.478)	.1027 (.4344)
Tertiary degree	.2605 (.4816)	.3385 (.5621)	.51 (.8402)	.4991 (.7257)	.286 (.7083)	.218 (.6256)
Part-time worker	.1809 (.4447)	.1984 (.4812)	.2548 (.4357)	.3334 (.4714)	.1609 (.3674)	.2424 (.4285)
Union member	.16 (.4106)	.1133 (.3655)	.3297 (.7004)	.3298 (.6133)		
Temporary worker			.07523 (.2638)	.0472 (.2121)	.1577 (.5373)	.1283 (.4962)
Self-employed without employees <sup>a</sup>	.1385 (.3809)	.1365 (.3964)	.09254 (.4092)		.03934 (.2915)	.01837 (.1922)
Self-employed with employees			.03961 (.2652)		.08847 (.3952)	.0366 (.2754)
Job tenure			5.608 (11.17)	9.87 (11.27)		
<i>N</i>	17862	5358	113568	52584	97183	97176

a: This row displays the mean for all self-employed workers for the GSS.

For the US and Germany we estimate logistic regressions where the dependent variable is our binary measure of perceived job insecurity; details of our approach for the GSS and SOEP data can be found in Appendix B. For the UK we use a different approach (based on the equivalence between a Poisson regression and a logit model) to get around the fact that we do not observe the “true” response to the BHPS job security question for the UKHLS portion of the sample, only an estimate of the probability of a particular response; details of our approach for the BHPS and UKHLS data can be found in Appendix C.

### 3.1 Trends in Adjusted Perceived Job Insecurity

The adjusted trends in perceived job insecurity are presented together with the raw trends in Figure 5 for the US, Figure 6 for the UK and Figure 7 for Germany. The adjusted trends are marginal effects from the regressions, evaluated for each observation and then averaged over the sample, relative to the base year of 2001 (2002 for the US, because the GSS lacks data on job security in odd years). The base year is chosen to represent the pre-GFC baseline for job security. Because Germany experienced a pre-GFC downturn in the mid-2000s which led to a rise in unemployment and perceived job insecurity, we have chosen a base year that precedes this downturn. The most striking feature for all countries is the similarity of the unadjusted and adjusted trends. This fact suggests that compositional changes in the workforce cannot explain the absence of an increase in perceived job security in these three countries over the last four decades.

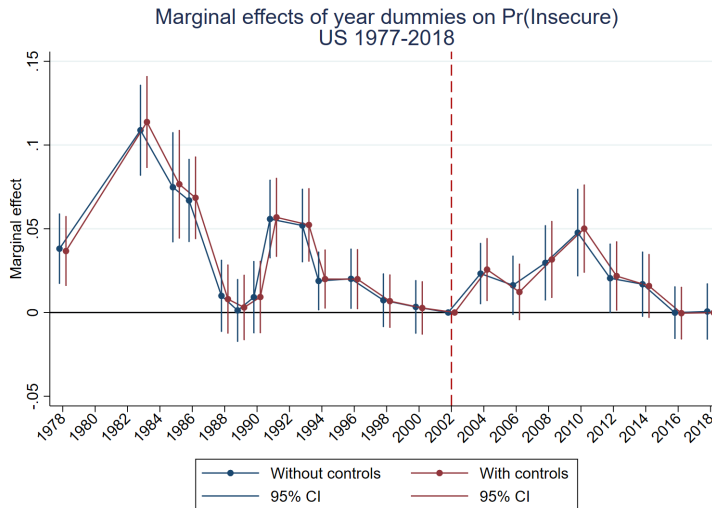


Figure 5: Marginal effects of year dummies in US regressions

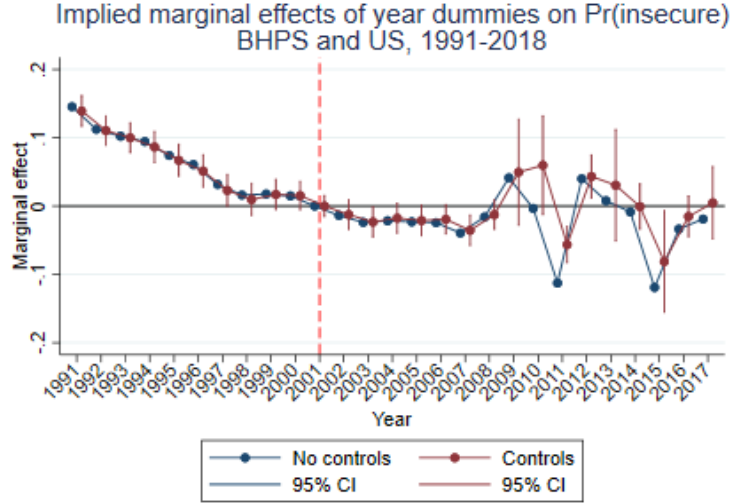


Figure 6: Marginal effects of year dummies in UK regressions

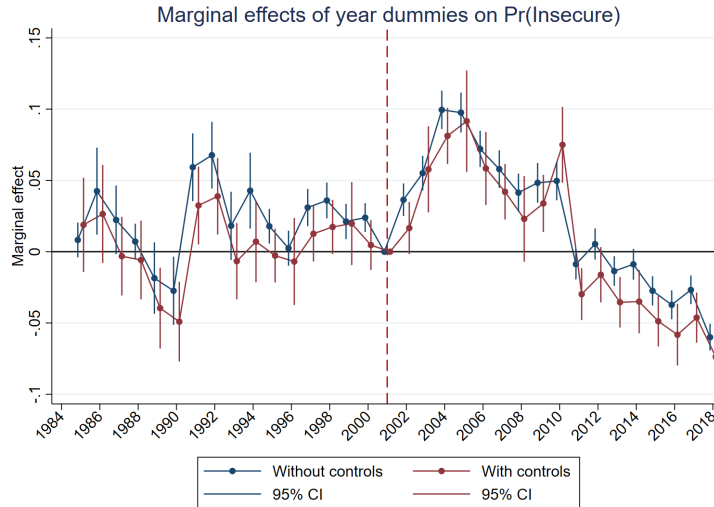


Figure 7: Marginal effects of year dummies in Germany regressions

### 3.2 The Impact of Personal and Job Characteristics on Perceived Job Insecurity

In Table 3 below, we present the marginal effects of selected covariates of interest on the probability of feeling insecure for each of the three country regressions (expressed in percentage points). Some of these findings are in accordance with the findings of previous studies on the determinants of job security: temporary workers are much more likely to feel insecure than permanent workers, and in the US and Germany higher-educated

workers are less likely to feel insecure. Immigrants and those of non-white ethnicity feel more insecure than natives and those of Caucasian descent in the US, as is also the case for immigrants to Germany. Interestingly, we do not detect an effect of job tenure on the likelihood of feeling insecure in the UK data, despite the fact that the average job tenure in the post-2001 period fell by over two years relative to pre-2001 (see Tables 1 and 2). Age effects are also essentially zero in all three countries. Indeed, the UK marginal effects are mostly insignificant and close to zero, suggesting a lack of heterogeneity in underlying job security across demographic groups after stripping out business cycle effects through the year dummies. In the US and Germany, though the calculated marginal effects are more often significant, the magnitude of those effects are small and similar to the magnitude of the UK marginal effects.

Apart from the temporary employee marginal effects, which are large and significant in the two countries for which we have temporary work data, only self-employment with employees in the UK and immigrant status in Germany have significant marginal effects of greater magnitude than 3 percentage points. These results help us understand why there are no trends in adjusted or unadjusted subjective job insecurity in spite of the alleged rise in the prevalence on non-standard employment. The explanation is that the types of non-standard employment associated with job insecurity have not risen as much as often suggested, while part-time work which often has risen is not associated with greater job insecurity. Together, these results imply that the rise of non-standard work is of limited importance in explaining trends in perceived job insecurity. However, this conclusion may be the result of using an empirical specification which allows different types of workers and jobs to be associated with different levels of job security, but requires the trends to be the same. Looking solely at the aggregate trend may obscure the fact that some sub-groups may now be experiencing increased insecurity. The next section investigates whether there is important heterogeneity.

Table 2: Average marginal effects of covariates on probability of insecurity

	US	UK	Germany
Temporary employee		0.420*** (0.0151)	0.124*** (0.00311)
Self-employed without employees <sup>a</sup>	-0.0308*** (0.00693)	0.0433* (0.0189)	0.0140 (0.00785)
Self-employed with employees		-0.0889*** (0.0218)	-0.00784 (0.00528)
Immigrant	0.0237*** (0.00555)	0.0163 (0.0197)	0.0429*** (0.00320)
Non-white	0.0281*** (0.00426)	0.0127 (0.0203)	
Part-time worker	0.0290*** (0.00473)	-0.0433* (0.0197)	-0.0202*** (0.00349)
Higher education degree	-0.0247*** (0.00501)	0.00713 (0.0179)	-0.0161*** (0.00331)
Union active at workplace	0.0159** (0.00491)	0.0251 (0.0186)	
Male	-0.00271 (0.00414)	0.0412* (0.0170)	-0.0108*** (0.00285)
Age	0.00143 (0.000939)	0.0183 (0.0153)	0.0122*** (0.000721)
(Age/10) <sup>2</sup>	-0.00204 (0.00106)	-0.0214 (0.0182)	-0.0139*** (0.000830)
Length of job tenure		-0.000561 (0.0165)	
<i>N</i>	20238	119488	182450

Standard errors in parentheses

This table displays the marginal effects of covariates of interest on the probability of feeling insecure, derived from the logistic regressions specified in Appendix B for the US and Germany, and from the Poisson regression, specified in Appendix C, used to analyze the UK data. The self-employed indicator is turned on for all self-employed persons in the US, but only for the self-employed without employees for the UK and Germany.

a: This row gives the marginal effect for all self-employed (with and without employees) for the US, as the GSS lacks data on the breakdown of the self-employed by number of employees.

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$



## 4 Heterogeneity in Trends in Perceived Job Insecurity

There are obviously many sub-groups that could be investigated, and a fishing expedition would undoubtedly uncover some with increased subjective job insecurity. Here, we focus on sub-groups where there has been more concern about deterioration in the quality of work: men vs. women, white vs. non-white workers, the educated vs. less well-educated, temporary workers vs. those on permanent contracts, and part-time vs. full-time workers. We also investigate whether the fall in insecurity in the 2010s can be explained by the contemporaneous rise in mean job tenure (see Tables 1 and 2) by seeing whether there are differences for short- and long-tenure workers. Results for all of these subgroups can be found in Appendix C, but we present the main results here. Our technical approach for adjusting the results for compositional changes is the same as above, where we assume that time trends are homogenous across subgroups; details of the approach can be found in Appendix B.

Our analysis finds a marked homogeneity of trends across groups. Workers who might be expected to have experienced a fall in security over the sample period, such as part-time workers or temporary workers, have experienced the same rise in security as those in more conventional working arrangements. The similarity of trends also holds across education groups, as well as across genders (shown in Appendix C).

The figures below demonstrate the homogeneity of trends across subgroups for selected groups of interest. Figures 8-10 show the marginal effects of the year dummies in our regressions for each of the US, UK, and Germany for part time workers. These marginal effects should be interpreted as deviations in the probability of feeling insecure from the base year, indicated on the figure by a dashed red line. In all three countries, part-time and full-time workers have experienced the same underlying trend in subjective job security over the course of the sample.

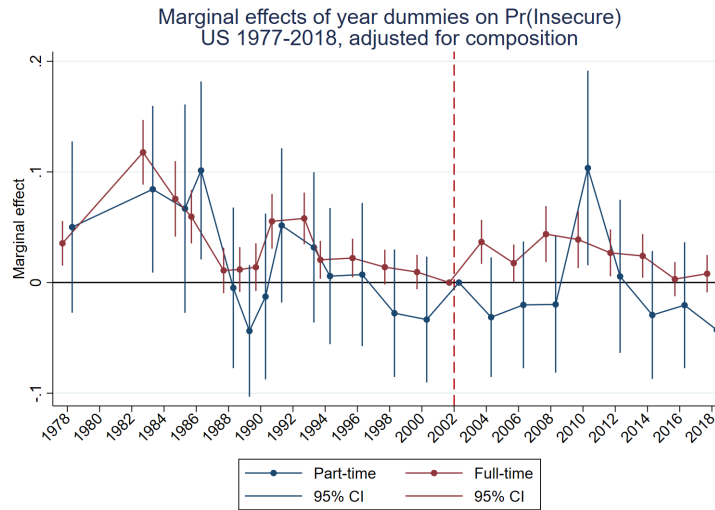


Figure 8: Marginal effects of year dummies in US regressions, by part-time work status

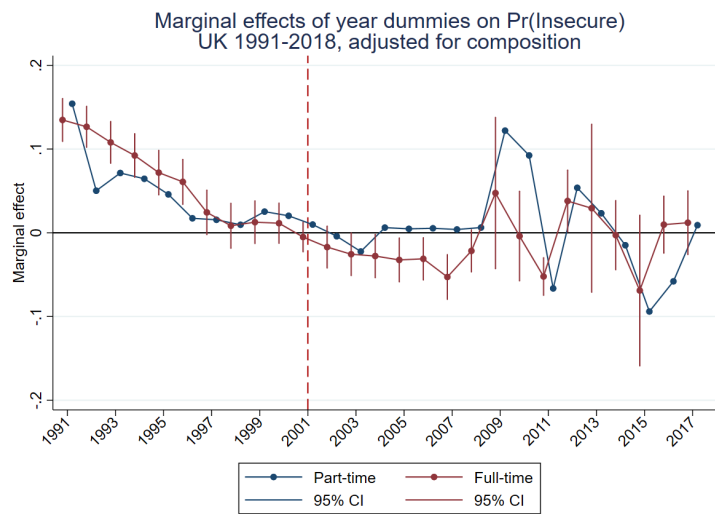


Figure 9: Marginal effects of year dummies in UK regressions, by part-time work status

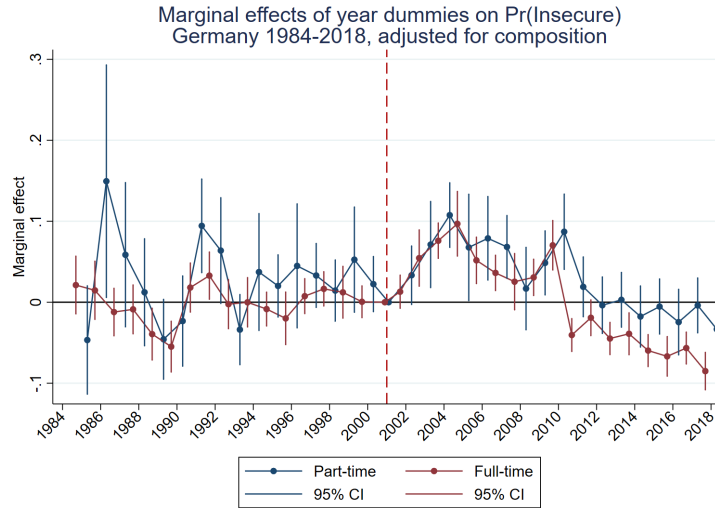


Figure 10: Marginal effects of year dummies in Germany regressions, by part-time work status

Next, we compare the trend in the insecurity of temporary workers to that of permanent workers. Figures 11 and 12 present the compositionally-adjusted trends in insecurity for temporary and permanent workers in the UK and in Germany (we lack data on job security for temporary workers in the US). In both countries, temporary workers actually feel more secure than they did before the GFC, but this appears especially true in the UK, where the security of temporary workers has risen by around 20pp (admittedly a noisy estimate because the share of workers on temporary contracts is quite small) in the years since the recession, even while the security of permanent workers returned to its pre-GFC level.

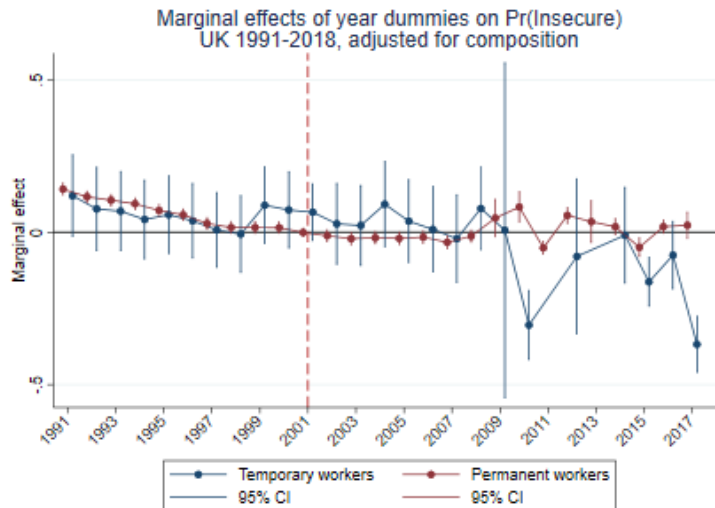


Figure 11: Marginal effects of year dummies in UK regressions, by temporary work status

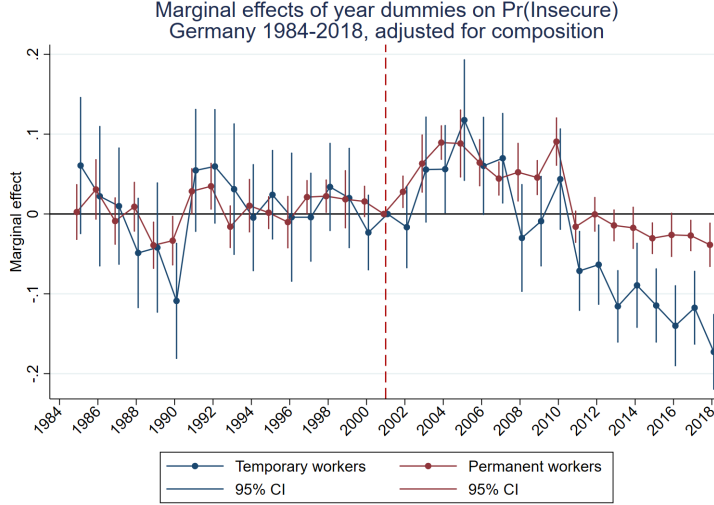


Figure 12: Marginal effects of year dummies in Germany regressions, by temporary work status

Finally, we consider the possibility that changes in mean job tenure among the employed population is driving our main results. Bachmann & Felder (2012) found that layoffs in Europe during the period 2002-2012 were concentrated among workers of short tenure, increasing the average job tenure via a compositional shift. Analogously, if long-tenured workers feel more secure in their jobs<sup>8</sup>, layoffs of short-tenured workers would mechanically increase the proportion of workers that feel secure in our framework. To test this hypothesis, we run the same regressions as above (with and without controls) for subsamples of the UK data. First, we restrict the sample to workers who started their jobs in the year they were surveyed (new starters). The second subsample consists of workers who did not start their job in the survey year. Figure 13 below shows that the trends in job security over time for these two subgroups are not substantially different, and that new starters feel significantly less insecure today than they did in the pre-recession period.

<sup>8</sup>A hypothesis that incidentally is not supported by our results for the UK.

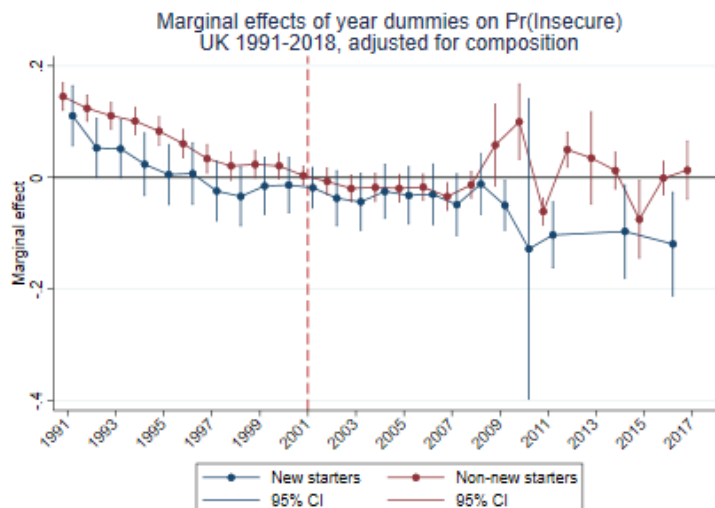


Figure 13: Marginal effects of year dummies in UK regressions, by job tenure

The main conclusion to be drawn from this exercise is that although there exist differences in levels of job security across sub-groups, their trends across time are virtually identical: most people in the US, German, and British labour forces feel more secure today than they did in the early 90s, and the proportion of insecure workers in each sub-group is around where it was before the GFC. This is despite the underlying changes in the composition of the workforce since the 1990s, with the rise of temporary and zero-hour contracts and otherwise “flexible” working arrangements, as well as the demographic changes in each of the three countries.

## 5 Broader European Evidence on Job Security

In this section, we briefly consider suggestive evidence on patterns of perceived job insecurity across Europe using data from the European Working Conditions Survey (EWCS)<sup>9</sup>. The EWCS is conducted every four to five years in 36 European countries, with a rotating panel of questions and approximately 1,000 respondents per country-year<sup>10</sup>. The 2005, 2010, and 2015 editions of the survey, which contain 106,572 complete responses, asked respondents to rate on a scale of 1-5 their agreement or disagreement with the following statement: “I might lose my job in the next six months.” 1 indicates “strongly disagree”, 2 indicates “tend to agree”, 3 indicates “neither agree nor disagree”, and 4 and 5 indicate different strengths of disagreement. The consistency of the wording of the question in each of the three survey waves facilitates the comparison

<sup>9</sup>European Foundation for the Improvement of Living and Working Conditions. (2020). European Working Conditions Survey Integrated Data File, 1991-2015. [data collection]. 8th Edition. UK Data Service. SN: 7363, <http://doi.org/10.5255/UKDA-SN-7363-8>

<sup>10</sup>The European Social Survey (ESS) also contains a rotating question that asks respondents to assess the likelihood of losing their job in the near future. However, because only the 2004 and 2010 editions of the ESS ask this question, it is dominated by the EWCS as a data source, and as such we only use the latter in our analysis.

of perceived job security over time and across European countries. Table 4 presents the proportion of each country’s respondents that responded 1 or 2 to the question for each survey year, along with the percentage point change in the insecure proportion from 2005 to 2015. Cross-country variation in levels is high, but most countries’ trends over time are similar. All but five countries (one of which being Germany) experienced a rise in insecurity from 2005 to 2010, and 25 of the 36 countries experienced a fall from 2010 to 2015. The overall change between 2005 and 2015, however, is more heterogeneous across countries.

The short length of the series means it is hard to distinguish long-run trends from cyclical variation in this data. For example, 2010 was shortly after the GFC and the Eurozone crisis in some European countries with elevated levels of unemployment that lasted until 2015 in some cases e.g. Italy and Spain which had higher levels of insecurity in 2015 compared to 2010. These rises in unemployment would be expected to cause higher levels of job insecurity. Figure 14 supports this conclusion by demonstrating that the Europe-wide relationship between a country’s unemployment rate and the proportion of its workforce that feels insecure has not changed. In fact, visual inspection of the trend lines plotted over each year graph suggests that the “unemployment-insecurity” tradeoff is flatter today than it was earlier in the 2000s—higher levels of unemployment do not connote higher levels of insecurity to the same extent in 2015 as in previous years. The general conclusion from the analysis of EWCS is that workers in most European countries do not feel significantly more insecure in the post-GFC era than they did in the years leading up to it, controlling for the level of unemployment.

Table 3: Job insecurity in Europe

	2005	2010	2015	P.p. change, 2005-2015
Belgium	9.1	16.3	15.2	6.2
Bulgaria	22.9	29.8	12.1	-10.8
Czech Republic	32.2	34.3	16.7	-15.4
Denmark	7.2	9.7	10.8	3.7
Germany	12.7	11.5	9.6	-3.2
Estonia	19.5	35.1	19.2	-0.3
Greece	20.9	19.4	21.1	0.1
Spain	15.0	24.5	26.0	11.0
France	7.8	11.9	13.6	5.9
Ireland	9.5	25.6	15.6	6.1
Italy	8.9	14.0	21.1	12.1
Cyprus	14.2	19.1	14.1	-0.2
Latvia	19.0	31.4	20.2	1.2
Lithuania	23.3	40.3	13.8	-9.5
Luxembourg	5.5	9.6	11.0	5.5
Hungary	22.2	24.1	16.7	-5.6
Malta	15.2	18.5	9.5	-5.7
Netherlands	17.8	14.1	24.9	7.1
Austria	8.9	10.6	10.5	1.6
Poland	26.6	18.0	24.0	-2.6
Portugal	19.3	18.1	18.9	-0.4
Romania	18.5	24.3	16.4	-2.1
Slovenia	27.3	27.0	27.5	0.2
Slovakia	15.1	13.7	8.1	-7.0
Finland	13.3	15.5	15.5	2.1
Sweden	20.4	21.8	14.7	-5.7
United Kingdom	6.8	12.9	12.6	5.8
Croatia	19.4	26.8	18.7	-0.8
North Macedonia	.	29.0	18.6	.
Turkey	19.1	21.3	15.1	-4.0
Norway	7.1	10.1	10.3	3.2
Albania	.	11.8	14.4	.
Kosovo	.	19.0	.	.
Montenegro	.	20.6	17.0	.
Switzerland	12.1	.	11.7	-0.4
Serbia	.	.	22.7	.

Data from the European Working Conditions Survey. Table shows proportion of workforce that feels insecure.

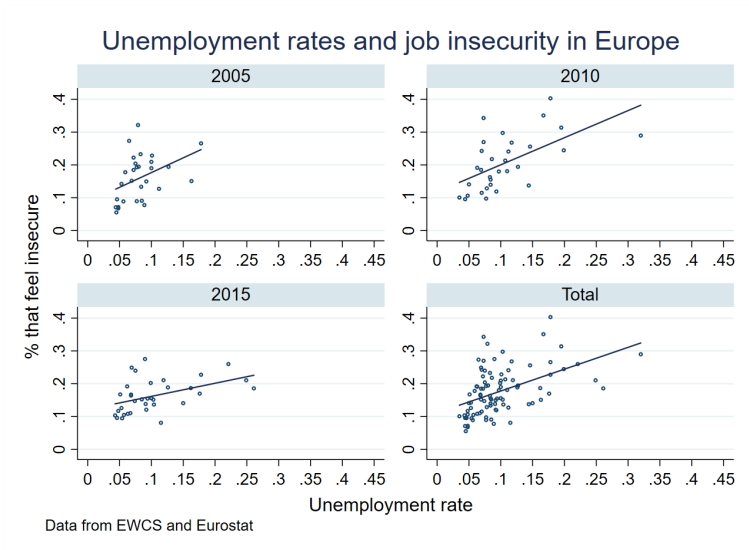


Figure 14: Unemployment and job insecurity in Europe, 2005-2015

## 6 Other Dimensions of Job Security

This paper has focused on job security measured as risk of job loss, something that is undoubtedly important to many workers. However, Standing (2011, p12) identifies eight dimensions of job security which define the ‘precariat’, of which we have focused on only one. The OECD defines these other dimensions as earnings quality (including both level and volatility) and the quality of the working environment, which includes the “nature and content of the work performed”, (lack of) risk to physical health, and workplace autonomy (OECD, 2013). It remains a possibility that the other constituent components of job quality and precarity are more important than subjective job insecurity and have deteriorated. Some scholars theorise that the “neo-Fordist” paradigm of production that has taken hold in advanced economies in the past few decades may have led to a fall in job quality along some dimensions like autonomy and challenge, despite rises in real wages<sup>11</sup>. However, Green et al. (2013) finds that perceptions of job quality have remained relatively stable in Europe, including the UK and Germany, and Handel (2005) reports similar findings for the US. And Bloom et al. (2017) find that earnings volatility in the US has fallen by one third since 1980.

One approach to this topic of analysis would be to try to estimate trends in other important dimensions of

<sup>11</sup> see Chapter 7 of Edgell et al. (2013) on job quality for an overview of these issues, or Chapter 8 of Gregg and Wadsworth (2011) for a focus on the UK.



job security, but our ability to do this is limited by the fact that questions vary across surveys and there is a lack of the long runs of data needed to identify trends. In this section, we take a different approach and explore whether there are any trends in overall job satisfaction. Overall job satisfaction is likely to encompass dimensions of work other than security and is a useful summary measure of how workers feel about their jobs.

## 6.1 Data and methodology

Each of our surveys contains information on respondents' reported job satisfaction. The General Social Survey asks its US respondents to rate their work satisfaction on a scale of 1 to 4, with 1 indicating "very satisfied", 2 indicating "moderately satisfied", 3 indicating "a little dissatisfied", and 4 indicating "very dissatisfied". The BHPS and UKHLS fortunately use the same question before and after the transition between surveys, asking respondents to rate their overall job satisfaction on a scale of 1 ("not satisfied at all") to 7 ("completely satisfied"), with 4 indicating neither satisfaction nor dissatisfaction. Finally, the German SOEP asks respondents to rate their satisfaction with their work on a scale of 0 to 10, with 0 being the lowest possible level of satisfaction and 10 being the highest.

To investigate the trend in job satisfaction, we construct binary variables indicating satisfaction for each of the three datasets. For the GSS, the dummy takes a value of 1 if the respondent answers 1 or 2 to the job satisfaction question. BHPS/UKHLS respondents get a value of 1 if their response is greater than or equal to 4. SOEP respondents are deemed satisfied if they answer 5 or more to their question. The raw trends in the proportion of each country's labour force that reports dissatisfaction with their job over time are plotted below in Figure 15. Though all countries saw a fall in reported job satisfaction during the GFC, visual inspection of the trends post-recession suggest a return to "normal" levels of job satisfaction in the decade since the crash.

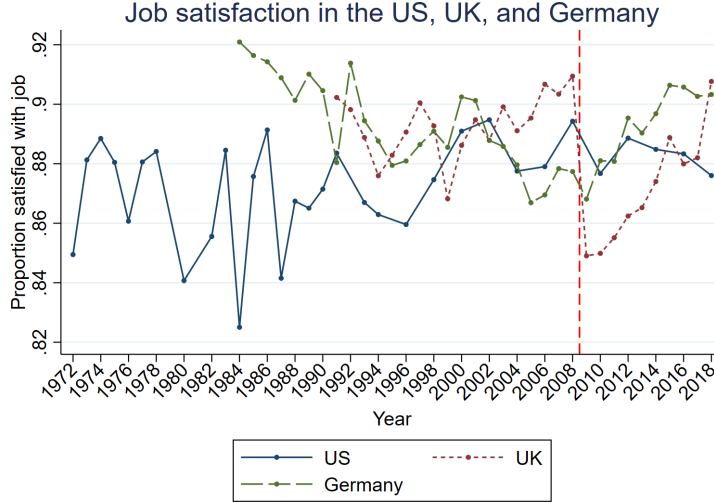


Figure 15: Job satisfaction in the US, UK, and Germany

To complete the analysis, we run the same two logistic regressions as in the job security analysis for each dataset in turn<sup>12</sup>: one with year dummies as the only covariates in order to capture the raw trend in satisfaction over time, and one with demographic and economic controls to adjust for workforce composition changes.

## 6.2 Results

Figures 16 to 18 plot the marginal effects of the year dummies for each of the three countries, with and without other controls. Our results indicate that workers in the US and in Germany are no less likely to be satisfied with their work today than they were before the recession. Job satisfaction was at an all-time high in the US on the eve of the GFC, and despite the fact that satisfaction had been falling for a number of years in Germany up to 2008, satisfaction since the recession has been consistently climbing. In the UK, though satisfaction has not fully recovered to pre-recession levels, our model suggests that the magnitude of the disparity in probability is less than 5 percentage points.

<sup>12</sup>We can use the logistic specification for the BHPS/UKHLS data because the question does not change from one survey to the next.

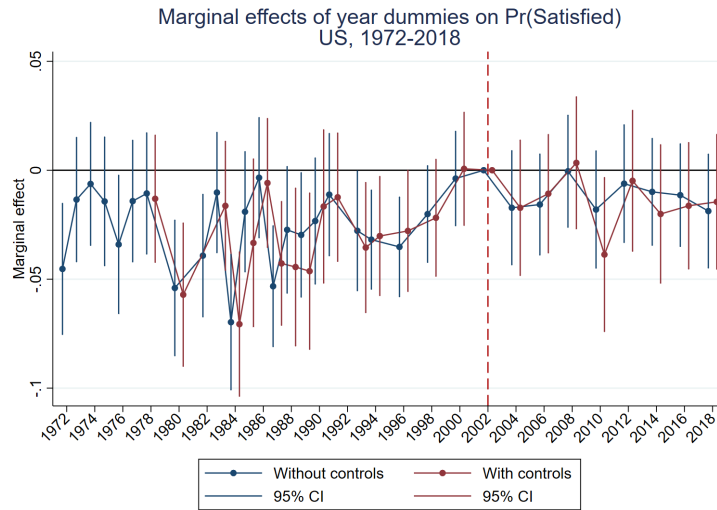


Figure 16: Marginal effect of year dummies in US regressions

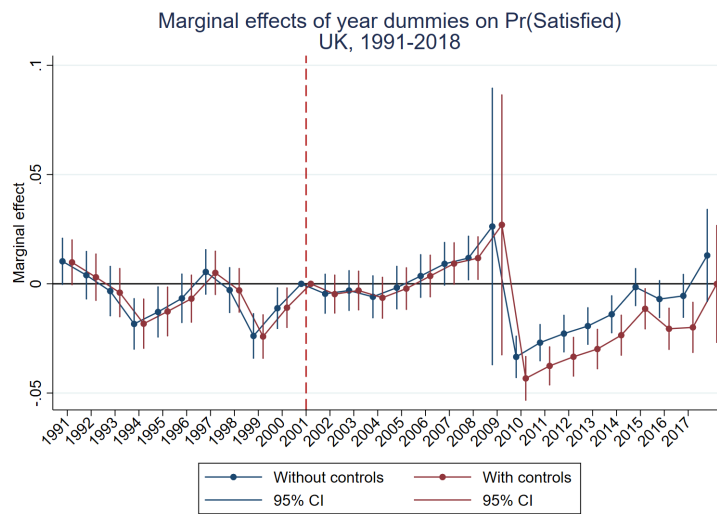


Figure 17: Marginal effect of year dummies in UK regressions

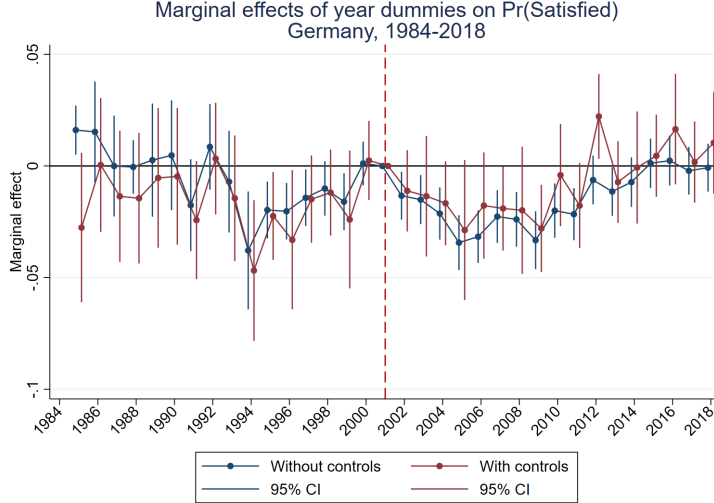


Figure 18: Marginal effect of year dummies in Germany regressions

## 7 Conclusion

In this paper, we have shown that contrary to what Hollister (2011) calls the “New Employment Narrative”, and despite the rise of “atypical” work arrangements, self-perceived job security has remained remarkably constant in the US, the UK, and Germany since at least the turn of the 21st century, and has returned to its long-term average since the spike that occurred during the Financial Crisis of 2008 and the ensuing recession. We have also demonstrated that the flat trend in perceived job security is extremely homogeneous across workers with different types of working arrangements, different demographic characteristics, and different education levels—almost all subgroups along any dimension of interest feel approximately as secure in their jobs as they did in the early 2000s.

In order to further our understanding of the dynamics of self-perceived job security and the impact of “atypical” work arrangements on these dynamics and on worker welfare more broadly, it would be useful to investigate whether job quality has adjusted along other margins, extending our preliminary analysis of the trend in overall job satisfaction in Section 6. There is also the question of changing worker preferences—if workers today have a stronger preference for atypical arrangements than they did 25 years ago, the scale on which workers assess their own job security and job satisfaction may have shifted, making analysis of long-run trends in self-perceived job security difficult. Datta (2019) provides evidence on workers’ willingness to pay for job characteristics that suggests that flexible work arrangements are detrimental to employee welfare, and

that the rise of flexible work is more to do with the desire of employers to contract flexibly with their workers rather than changing worker preferences, but it would still be helpful to investigate whether workers are more accepting of these types of arrangements today than they were in the past. for These are topics for further research.

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## Appendix A: Predictive content of subjective job security

As discussed in the main text, our analysis is more meaningful if perceived job security is correlated with job loss in the near future. We can test the hypothesis that the two variables are unrelated by running logistic regressions of the following form using the BHPS and SOEP panel datasets:

$$Pr(Y_{it} = 1) = \frac{e^{\gamma I_{it-1} + x'_{it-1}\beta}}{1 + e^{\gamma I_{it-1} + x'_{it-1}\beta}}$$

Where  $Y_{it}$  is a dummy variable that equals 1 if individual  $i$  is in the same job at time  $t$  as she was at time  $t - 1$ ,  $I_{it-1}$  is a fixed effect for individuals that feel insecure in  $t - 1$ , and  $X_{it-1}$  is the matrix of covariates from our main specification (discussed in Section 3), chosen in order to adjust our estimates for demographics and job characteristics. If perceived insecurity is predictive of job loss,  $\gamma$  should be positive.

Both regressions indicate a highly significant relationship between  $Y_{it}$  and  $\gamma$ : in the BHPS regression,  $\gamma_{it-1} = .640$  ( $S.E. = .0344$ ), and in the SOEP regression,  $\gamma = .535$  ( $S.E. = .0353$ ). These estimates amount to a 44.4% increase in the probability of job loss in the BHPS sample, and a 23.1% increase in the SOEP sample. These results demonstrate that self-assessed job security does indeed contain useful information about the likelihood of job loss in the near future.



# Appendix B: Probability of insecurity regressions using US, UK, and Germany data

## B.1 Procedure for adjusting for composition of labour force in logistic regressions in the GSS and SOEP datasets

With the insecurity indicator as the dependent variable, we run logistic regressions of the following form using each dataset by itself:

$$Pr(insecure_i = 1) = \frac{e^{x_i'\beta}}{1 + e^{x_i'\beta}}$$

Where the dependent variable is the probability that worker  $i$  feels insecure. We have two main specifications for this model. The first is simply a regression using a vector of year dummies as the independent variables. The resulting marginal effects from this model,  $\frac{\partial Pr(insecure_i=1)}{\partial x_{year}}$ , simply capture the difference in the expected probability of feeling insecure in year  $x$  and the probability in the base year. These marginal effects capture the raw trend in insecurity over the course of the sample. If they are significantly different from zero, we can interpret this as a significant difference in the raw probability of job insecurity in that year, relative to the base year.

The second specification uses the year dummies as independent variables, but also controls for socioeconomic and job characteristics of the worker. We control for sex, age, race, education, being self-employed with and without employees, and being a temporary worker. We also include industry fixed effects. For dummy covariates, we calculate average marginal effects by calculating the predicted probability of feeling insecure for each observation with the dummy switched on and off, and then averaging those individual marginal effects over the whole sample, giving an average marginal effect. For continuous covariates, we compute the predicted probabilities for each observation at their observed covariate values, then again after increasing the covariate of interest by a small amount, and averaging those differences over the sample as in the dummy variable case. Net of these demographic and socioeconomic controls, the marginal effect of the year dummies should tell us whether or not there has been an underlying change in the baseline probability of feeling insecure within job types and demographic cells. If the marginal effects of these year dummies are similar

across both specifications, we may hypothesize that changes in the composition of employment plays only a small role in explaining changes over time.

## B.2 Crosswalk for the insecurity questions in the UK sample

For the UK we have to take a different approach because of the different questions asked in the BHPS and UKHLS. First, we have to have a crosswalk between the BHPS job insecurity question and the UKHLS one. In order to obtain the unconditional probabilities of a given response to the BHPS job security question for the UKHLS portion of the sample (which did not actually answer the question), we estimate a multinomial logit model with the BHPS question's response as the dependent variable and the UKHLS job security question and controls as the independent variables for waves 6 and 7, which contain both the UKHLS and BHPS questions:

$$Pr(BHPS_i = j | US_i = y) = \frac{e^{X_i' \beta_j + \theta_y}}{1 + \sum_{k=2}^7 e^{X_i' \beta_k}}$$

Where  $BHPS$  is the response to the BHPS security question and  $US$  is the response to the UKHLS security question, and the 6  $\beta_k$  vectors in the denominator contain the  $\theta$  vector of dummy variables indicating a given response to the UKHLS question. The predicted probabilities  $\widehat{Pr(BHPS_i = j | US_i = y)}$  from this model give the probability of responding a certain way to the BHPS job security question, conditional on the respondent's answer to the job security question found in UKHLS as well as these two waves of the BHPS. We then averaged these probabilities across the two-wave sample, with appropriate survey weights, in order to find the average probability of a BHPS security response conditional on the UKHLS security response. The Law of Iterated Expectations allows us to find the unconditional probability of responding a certain way to the BHPS security question for those who did not actually answer the question, i.e. those in the UKHLS sample. This unconditional probability can be calculated as follows:

$$Pr(BHPS = j) = \sum_{i=1}^4 Pr(BHPS = j | US = i) Pr(US = i)$$

$Pr(US = i)$  can be calculated empirically from the UKHLS sample space by dividing the number of respondents who answered a certain way to the question by the total number of respondents to the question. We already obtained the conditional probabilities of answering a certain way on the BHPS security question from the multinomial logit model above; all that remains is to sum the product of these two probabilities over the four possible responses to the UKHLS security question to obtain the desired unconditional probabilities.

### B.3 FE Poisson-logistic regression equivalence

Because we had to impute the probabilities of answering a given way to the BHPS job security question for the UKHLS sample, we do not observe what their true response would have been had they been explicitly asked the question. As such, we cannot construct a binary variable indicating insecurity as we could for the GSS and SOEP. One way around this problem is to transform the data slightly in order to exploit the well-known equivalence between multinomial logit models and Poisson models with individual-year fixed effects (Palmgren, 1981; Baker, 1994; Lang, 1996). The dependent variable is the probability of giving a particular response to the BHPS survey. For those who are in the BHPS survey this is equal to 1 for the response they gave and zero for every other. For those in the UKHLS survey it is the estimated probability of giving every response to the BHPS question. We can then compute the marginal effects of our covariates of interest from this model in the same manner as in the simple logistic models used for the GSS and SOEP data.

The model we use to analyze the UK data is a typical Poisson regression, using a transformed dataset in order to exploit the equivalence between the log-likelihood function used to estimate a multinomial logit model and the log-likelihood for a Poisson model with individual-year fixed effects. It is specified as follows:

$$E[Y_i|X_i] = e^{X_i'\beta + \epsilon_i}$$

Where  $X$  is a matrix of socioeconomic and demographic controls and an individual-year fixed effect, and  $Y$  is a binary variable taking value 1 if the observation (of which there are 7 for each individual-year), henceforth sub-observation corresponds to the true realised response to the job security question (recall that there are 7 possible responses to the BHPS job security question). For the UKHLS portion of the sample,  $Y$  is the imputed probability of giving that response. The controls matrix  $X$  contains the same controls as the logistic regressions above, interacted with a vector of 6 dummy variables, one for each possible response minus the base category, each of which takes a value of 1 if that sub-observation in question corresponds to that possible response. The  $7 \times K$  matrix  $X$  is illustrated below for one individual-year, with the first column indicating the sub-observation's response,  $v_x$  indicating that the sub-observation corresponds to response  $x$  with  $x = 4$

is the base category, and there are  $K$  control variables  $x_{ik}$ :

$$\begin{bmatrix} 1 & v_1 * x_{1i} & v_1 * x_{2i} & \dots & v_1 * x_{Ki} \\ 2 & v_2 * x_{1i} & v_2 * x_{2i} & \dots & v_2 * x_{Ki} \\ 3 & v_3 * x_{1i} & v_3 * x_{2i} & \dots & v_3 * x_{Ki} \\ 4 & 0 & 0 & \dots & 0 \\ 5 & v_5 * x_{1i} & v_5 * x_{2i} & \dots & v_5 * x_{Ki} \\ 6 & v_6 * x_{1i} & v_6 * x_{2i} & \dots & v_6 * x_{Ki} \\ 7 & v_7 * x_{1i} & v_7 * x_{2i} & \dots & v_7 * x_{Ki} \end{bmatrix}$$

The coefficient vector  $\beta$  thus has  $6K$  individual coefficients, since one response acts as the base category. This model may seem unnecessarily complex, but the advantage is that we are able to back out the average marginal effect of a given variable on the probability of responding a certain way to the question using the estimated coefficients by computing the expected probability of each response category for every respondent—with and without the covariate of interest switched on for dummy variables, and at the observed value as well as after changing the value by a small amount for continuous covariates—and then computing the difference between those probabilities and averaging those differences over the sample. We can therefore compare our UK results to the Germany and US results.

## B.4 Marginal effects of year dummies in regression with individual fixed effects

The figures below plot the results from our main specifications for the UK and Germany with individual fixed effects included as covariates; time-invariant demographic controls like sex and race are excluded. Visual inspection of these plots compared to those in the main text demonstrates that the estimated trends in job security are not affected by the inclusion of individual fixed effects. There is, however, a difference in levels depending on the inclusion of individual FEs in the SOEP regressions. In particular, the magnitude of the deviations from the base year are larger in the FE models, with maxima and minima on the order of 20 to 35 percentage points. Our conclusions about trends in subjective job security over the past four decades are unaltered by these level differences. There is essentially no difference in levels in the UK regressions.

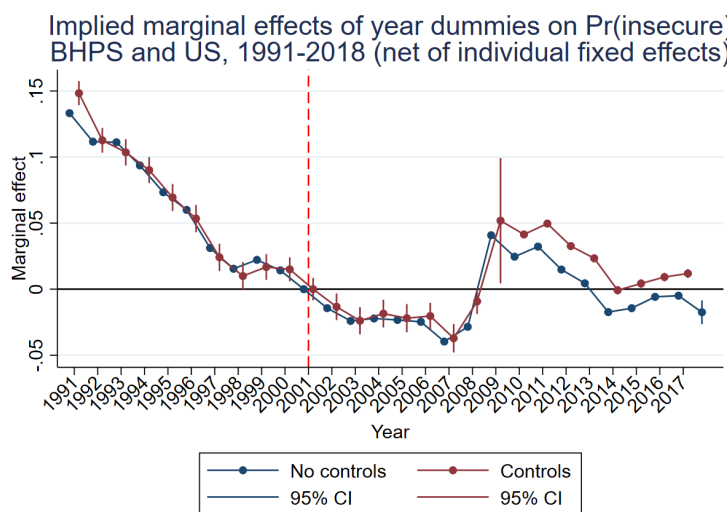


Figure 19: Marginal effects of year dummies in UK regressions, with individual FEs

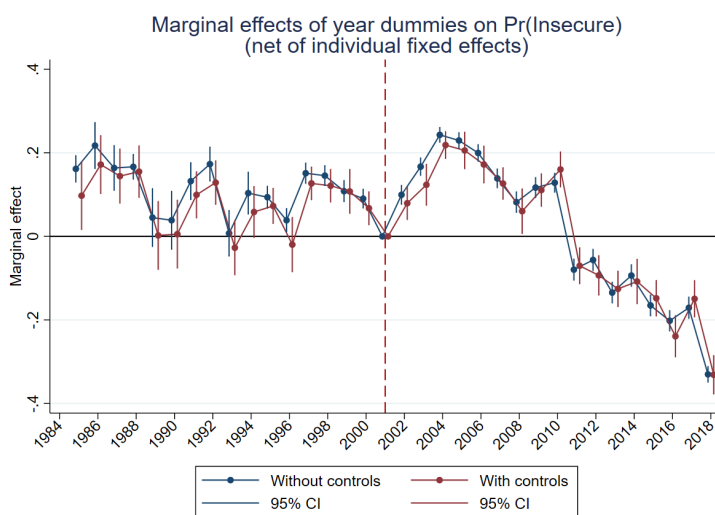


Figure 20: Marginal effects of year dummies in Germany regressions, with individual FEs

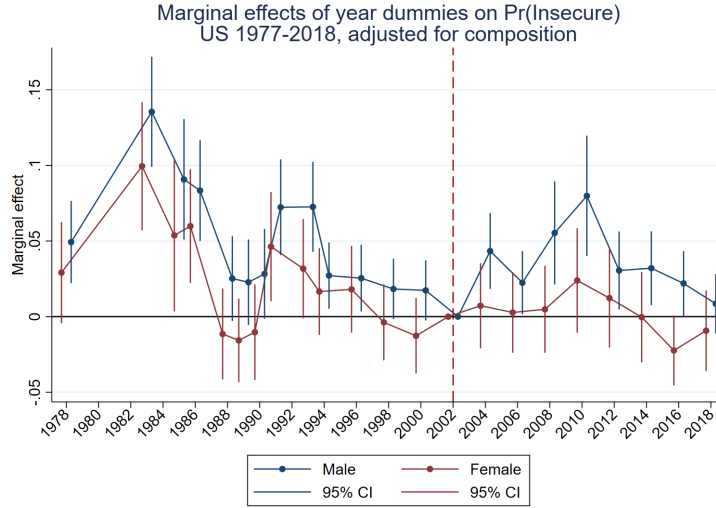


Figure 21: Marginal effects of year dummies in US regressions, by gender

## Appendix C: Marginal effects of year dummies by demographic group

This appendix contains the marginal effects from the logit and Poisson models of insecurity for subgroups not discussed in Section 4. Our conclusions about the lack of differential trends for subgroups presented in the main text are the same for those below—workers with differing levels of education, of different genders, and with different self-employment status have all experienced virtually the same trend in subjective insecurity over the course of the sample.

### Insecurity by gender

Figures 21 to 23 present the adjusted probabilities of feeling insecure by gender for the US, UK, and Germany as deviations from their pre-GFC levels. The results from all three countries indicate that insecurity followed a similar trend for men and women over the entire sample period, and has returned to its pre-recession levels for both groups.

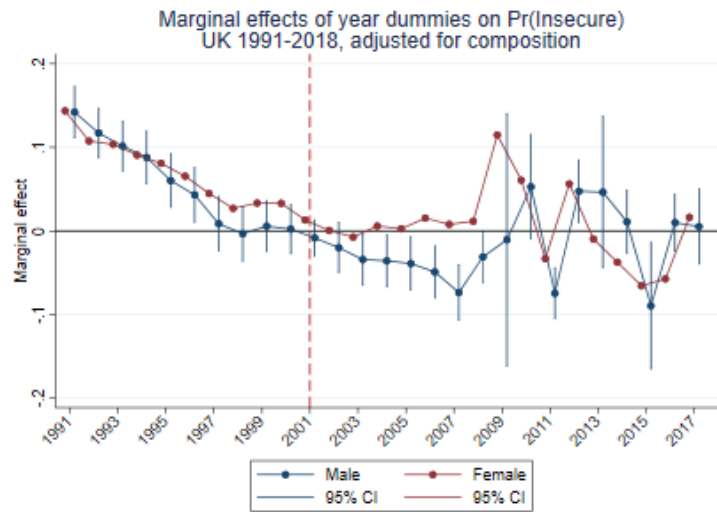


Figure 22: Marginal effects of year dummies in UK regressions, by gender

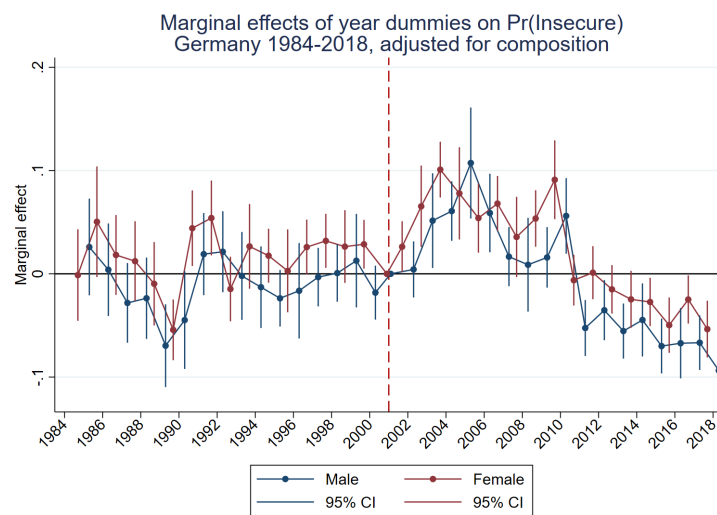


Figure 23: Marginal effects of year dummies in Germany regressions, by gender

## Insecurity by race

Figures 24 and 25 present the adjusted probabilities of feeling insecure for white and non-white workers in the US and in the UK. In both cases, there is no significant difference between the trends for white and non-white workers, and both groups appear to feel as secure as they ever have in the last 30 to 40 years.

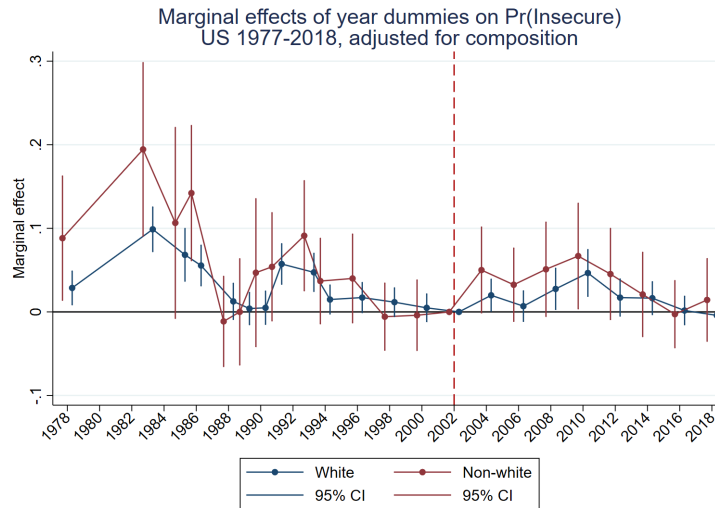


Figure 24: Marginal effects of year dummies in US regressions, by race

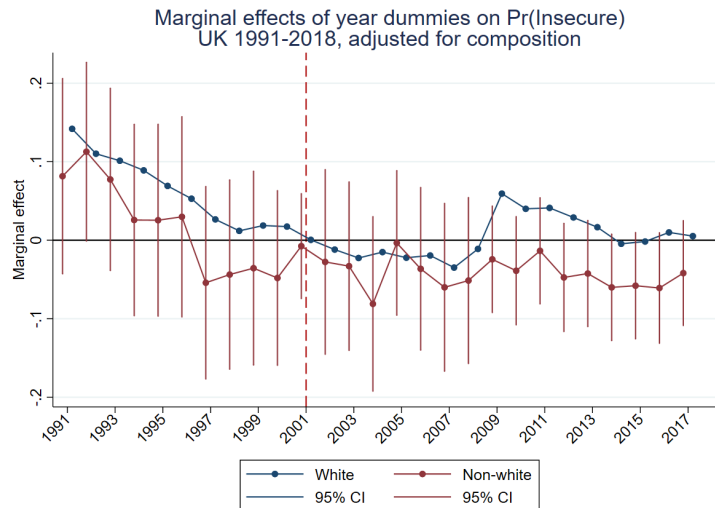


Figure 25: Marginal effects of year dummies in UK regressions, by race



## Insecurity by education level

Figures 26 to 28 present the adjusted probabilities of feeling insecure, broken down by level of educational attainment, for the US, UK, and Germany as deviations from their pre-GFC levels. In each country studied, workers with and without tertiary degrees experienced remarkably similar trends in their job security. Our results do suggest that job security responses to the GFC did differ by education level, with insecurity rising among workers without a university degree in the US and the UK (perhaps because unemployment for the less-educated tends to rise more in recessions), but in all three countries each subgroup has seen their job security return to pre-recession levels.

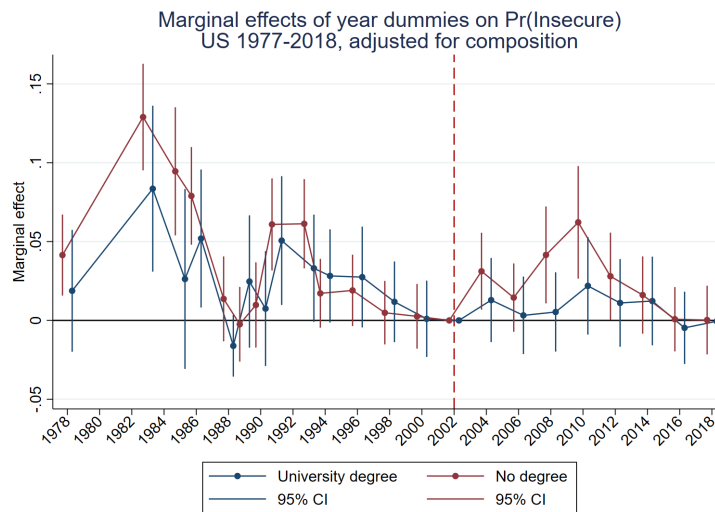


Figure 26: Marginal effects of year dummies in US regressions, by education level

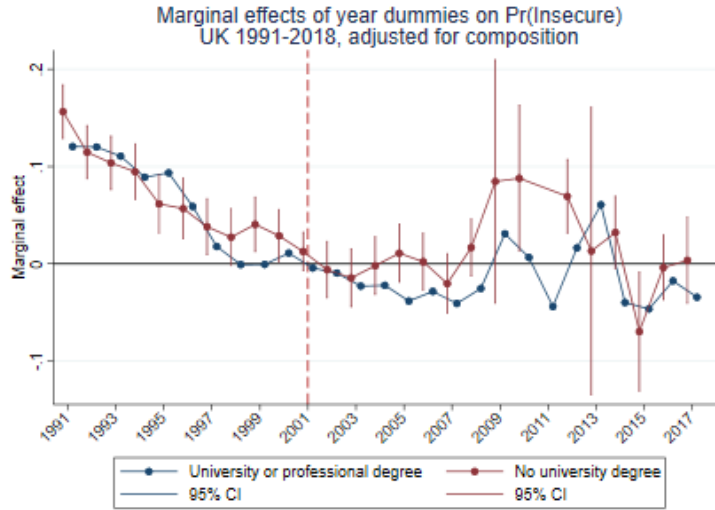


Figure 27: Marginal effects of year dummies in UK regressions, by education level

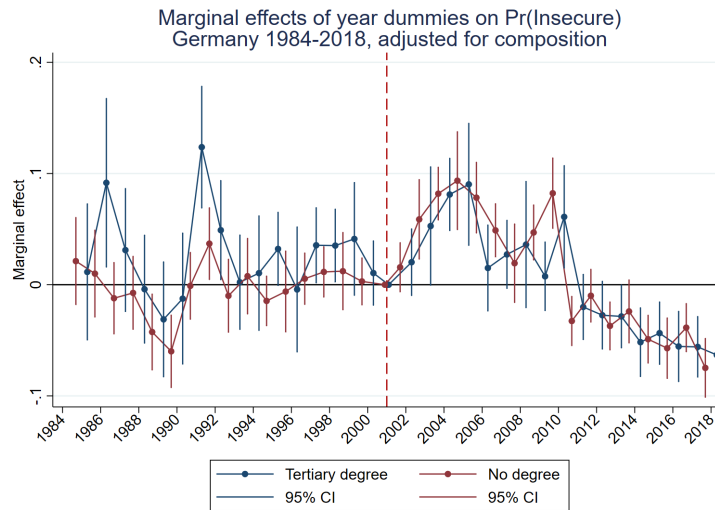


Figure 28: Marginal effects of year dummies in Germany regressions, by education level

## Insecurity by self-employment status

Finally, we investigate the trend in job security among the self-employed in each of the three countries. The marginal effects of the year dummies in these regressions are consistent with our overall conclusions about the lack of heterogeneity in job insecurity trends across characteristics. However, because of sparse data on self-perceived job security among self-employed workers in some survey years, especially in Germany pre-2000

and in the UK post-2008, we are underpowered to detect small differential trends between the self-employed and non self-employed workers—and in fact, in the UK we do not have the data to detect changes in the job security of the self-employed since 2008 at all. Nevertheless, the results plotted in figures 29 to 31 below allow us to reject the hypothesis that there are large differences in trends leading up to the recession in the UK, and since 2000 in Germany.

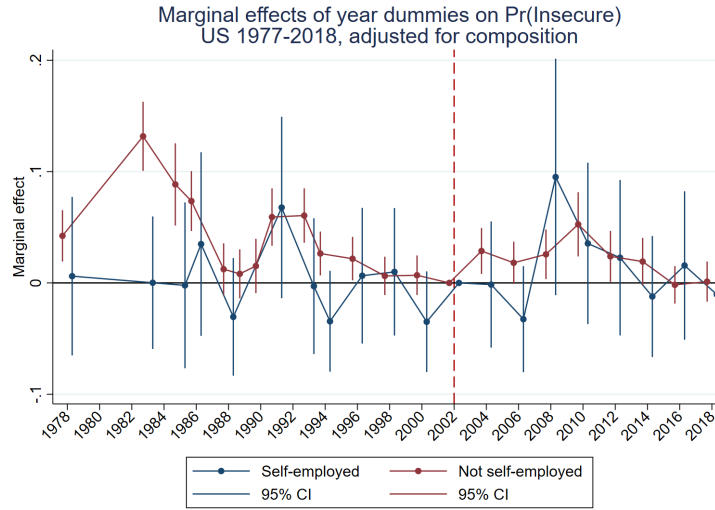


Figure 29: Marginal effects of year dummies in US regressions, by self-employment status

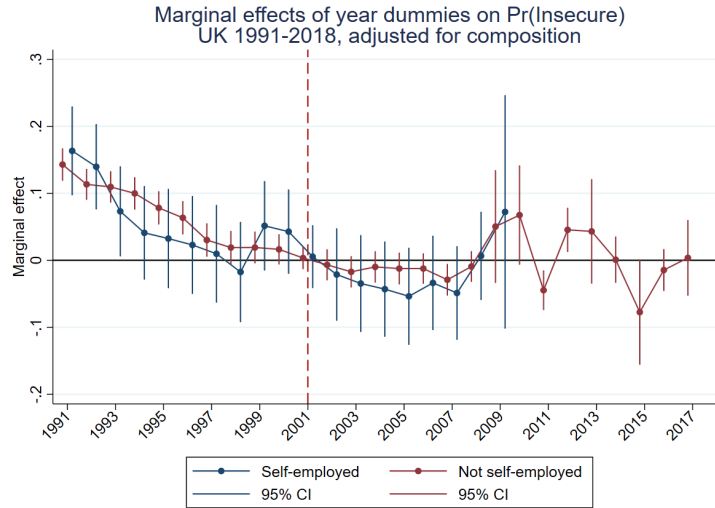


Figure 30: Marginal effects of year dummies in UK regressions, by self-employment status

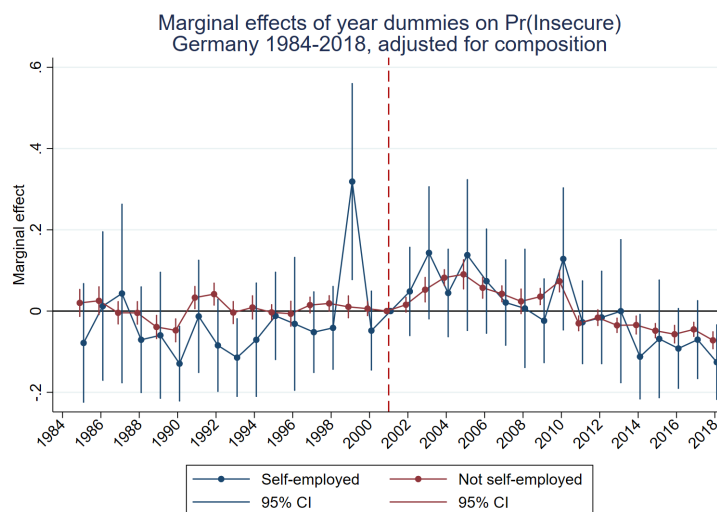


Figure 31: Marginal effects of year dummies in Germany regressions, by self-employment status

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